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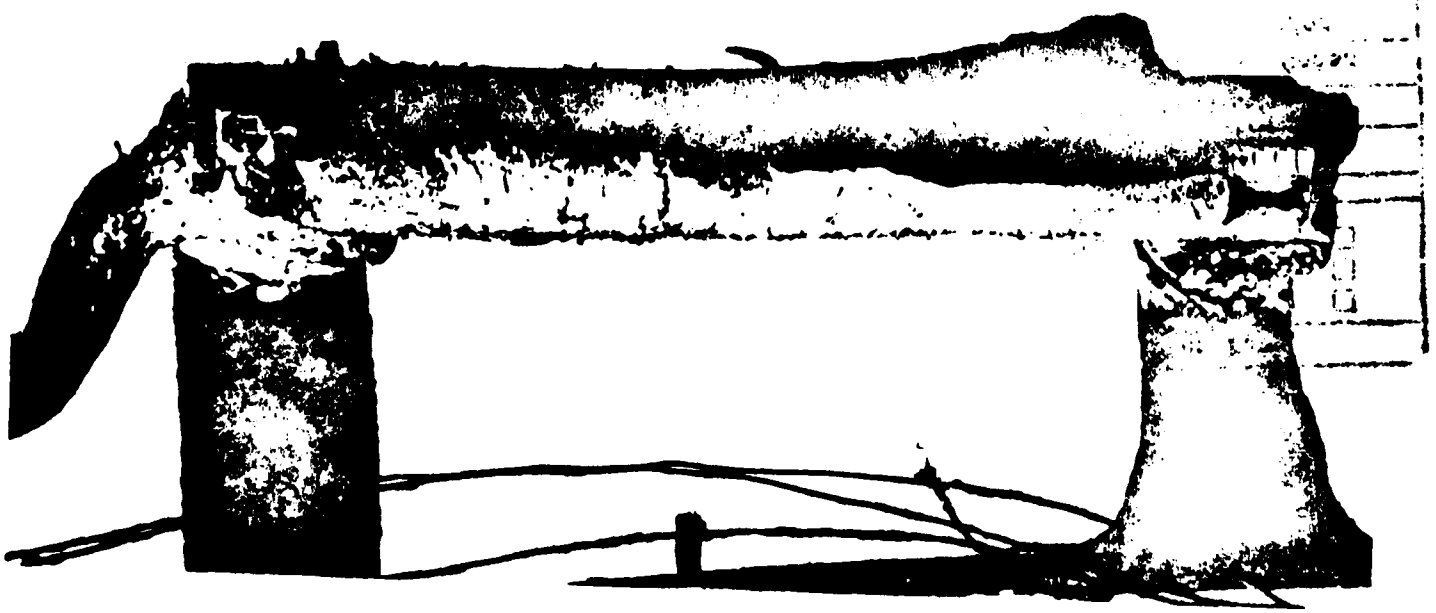
NATO Establishes Insensitive Munitions Information Center

Background. The NATO Insensitive Munitions Information Center (NIMIC) has been established as a clearinghouse for information in insensitive munitions and munitions safety. The pilot facility--Pilot NIMIC--is located at the Johns Hopkins University Applied Physics Laboratory, Laurel, Maryland. The NIMIC focuses on technologies that can reduce inadvertent detonation during manufacture, storage, transportation, or deployment.

Discussion. The NIMIC receives information in the form of technical reports, meeting papers, monographs, theses, dissertations, patents, and journal articles, as well as specifications (materials, systems, and environments) and test techniques and procedures. Bibliographic information is extracted and entered into relational databases.

Operating under a memorandum of understanding (MOU), NIMIC brings representatives from Canada, France, the Netherlands, Norway, the U.K. and the U.S. together at the Pilot NIMIC facility where they conduct technical analyses, identify areas for technology achievement, and respond to inquiries. In addition to acting as an information center for distribution of munitions and explosive safety information, Pilot NIMIC is a test bed for the NIMIC relational data collection and the analysis facility. Equipment, hardware, software, standard operating procedures, rules and regulations, layout, and personnel requirements are all being tested and evaluated at the Pilot NIMIC facility.

The NIMIC's task is broad, because insensitive munitions research involves the interplay of such diverse disciplines as detonation physics, including deflagration-to-detonation transition (DDT) and shock-to-detonation transition (SDT); packaging, metal-parts design; and fire-suppression systems. Approaches to the insensitive munitions problem fall broadly into two categories--reducing the potential for inadvertent activation and reducing the effects of such activation. Solutions generally involve using less sensitive energetic materials, incorporating mitigating devices integral to the munitions' design, or mechanical devices external to the munition to protect it from a hostile environment. Any solution must allow the munitions designer to achieve an acceptable level of insensitivity while retaining the necessary performance characteristics and storage capability. (See Figure.)



Fast cookoff testing of a rocket motor caused a violent explosion. The same test conditions were applied to a different motor, whose design incorporates IM features and resulted in a simple burning reaction.

A current NIMIC effort is to increase NATO country participation by establishing national focal points; i.e., individuals who will resolve information-exchange problems and will act as ready references in their fields of expertise. Under the governing MOU, certain agencies of participating nations are authorized direct access to Pilot NIMIC information; others agencies may gain access through their national focal points. The NIMIC steering committee must approve nonparticipating nation access.

For further information on Pilot NIMIC, contact Mr. George Starken, Pilot NIMIC, Johns Hopkins University/Applied Physics Laboratory, Laurel, Maryland 20707-6099; telephone (301) 997-3034.

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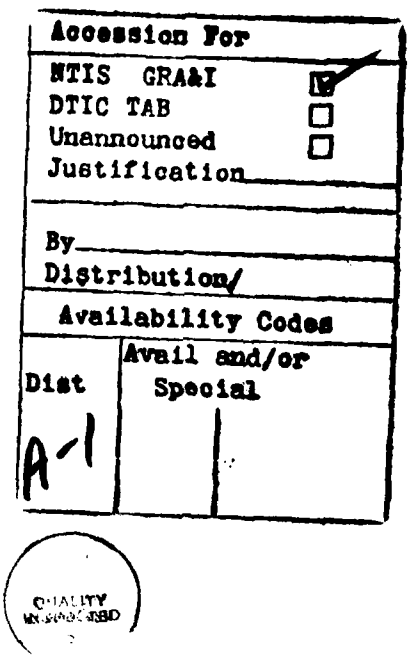

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